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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,344	07/09/2003	Ryuichi Iwamura	SNY-T5463.01	1513

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EXAMINER	
RIVAS, SALVADOR E	
ART UNIT	PAPER NUMBER
2619	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,344	IWAMURA, RYUICHI	
	Examiner	Art Unit	
	SALVADOR E. RIVAS	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7,9,11-14,16,17,20,21 and 31-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *32-34* is/are allowed.

6)☒ Claim(s) *7,9,11-14,16,17,20,21 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Action is in response to Applicant's amendments filed on January 4, 2008. **Claims 7, 9, 11-14, 16-17, 20-21, and 31-34** are now pending in the present application. **This Action is made final**.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 14, 16, 20, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application Publication # 2004/0184427 A1)**.

Regarding **claim 16**, Gitlin et al. teach a time slot and carrier allocation method for time division multiple access (TDMA) multiple carrier communications, comprising: determining from a tone map (Fig. 5 @ 40) that first and second time slots are generally allocated to a first and a second receiver respectively ("… one "unit" of "slice", which is

taken to be one frequency band allocation for one time slot allocation, is the minimum amount of communications resource which will be available to a user.", Column 4, Lines 26-29); determining from the tone map (Fig. 5) that the first and second receivers are able to receive using a common set of carriers ("the transmission resource, partitioned into the "time-frequency" domain, is divided into a plurality of time-frequency "slices" that are allocated to users according to their various transmission requirements." Column 3, Lines 7-10); determining that a single data stream is to be transmitted to the first and second receivers ("... the medium is to provide a central control 100 to maintain or otherwise keep a lookup table containing the status of the availability of space within the medium 40 ..." (Column 4, Lines 43-49) which means that central control (Fig.5 @ 100) will "allocate particular time-frequency slices 52 to a given user so as to anticipate "future" requests which will be made by users 46, 48, 50 so as to best optimize full use of the overall medium 40" (Column 5, Lines 1-4)); and wherein the number of common carriers is greater than a threshold number of available carriers, and wherein the threshold number comprises approximately 50% of available carriers (Using "... their respective transmitters ... various of the users 46, 48, 50 can modulate their signals into one or more of the available frequency bands 42 on a time slot-by-slot 44 basis in order to effect optimum scheduling of the users within the medium 40 to efficiently make use of the available time-frequency medium 40." Column 4, Lines 43-49). However, Gitlin et al. fails to teach transmitting a new tone map to the first and second receivers that specifies that the first and second receivers are to receive the

single data stream using the common set of carriers during one or more designated time slots.

Lynch et al. teach the exchange of tone maps (read as physical layer feedbacks) between communication stations utilizing a "link management services 22 so that currently preferred sets of the OFDM channels are used for conveying data between a sending station and a station that supplied the tone map."(paragraph [0057], Lines 1-5). It would have been obvious to a person of ordinary skill in the art to combine Lynch et al. with Gitlin et al. for the purpose of transporting tone map between nodes in a network. The motivation being for efficiently selecting a responding node in a shared communication medium.

Regarding **claim 14**, and **as applied to claim 16 above**, Lynch et al., as modified by the time slot and carrier allocation method of Gitlin et al., teach wherein the new tone map (read as a physical layer feedback, [0011], Lines 9-10) specifies that an unused carrier is to be reallocated to a plurality of other streams of data (the physical layer feedback "...indicates which of a plurality of orthogonal frequency channels (tones) defined by the OFDM standard, are currently to be used for communicating with an identified one of the other stations." paragraph [0011], Lines 11-14).

Regarding **claim 20**, and **as applied to claim 16 above**, Gitlin et al., as modified by Lynch et al., teach the time slot and carrier allocation method wherein the tone map (Fig. 5 @ 40) designates that the first and second receivers receive the single data stream using merged time slots ("the transmission resource, partitioned into the "time-

frequency" domain, is divided into a plurality of time-frequency "slices" that are allocated to users according to their various transmission requirements." Column 3, Lines 7-10).

Regarding **claim 31**, and **as applied to claim 16 above**, Lynch et al., as modified by Gitlin et al., teach a method (read as OFDM) wherein the communication is carried out in a power line communication system (read as a power distribution network (Fig.1 @ 8), Paragraph [0006]).

Claims 11, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application Publication # 2004/0184427 A1)** and further in view of **Yongue, III et al. (US Patent # 6,442,129 B1)**.

Regarding **claim 11**, and **as applied to claim 16 above**, Yonge, III et al., as modified by Gitlin et al. and Lynch et al. who teach the time slot and carrier allocation method, teach wherein a number of unused carriers allocated to the control stream of data is less than a specified maximum. (Yonge, III et al. illustrates where the number of available carriers to be reallocated is determined based on information generated at a receiving network node. (Column 1 Lines 50-54 and Column 2 Lines 4-7))

Regarding **claim 12**, and **as applied to claim 16 above**, Gitlin et al., as modified by Lynch et al., teach a time slot and carrier allocation method (Fig.5 Column 3 Lines 7-10). However, Gitlin et al., as modified by Lynch et al., does not disclose expressly the specified maximum is 10% of the available carriers.

Applicant has not disclosed that the specified maximum having 10% of the available carriers provides an advantage, is used for a particular purpose, or solves a

stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Yonge, III et al. because the modulation rate can have predetermined value of available carriers set aside in a tone map for the transmission of data to occur to a selected receiver on a given network (Column 13 Lines 25-40). Therefore it would have been obvious to one of ordinary skill in the art to modify the value a as shown by Yonge, III et al. in the method of Gitlin et al., as modified by Lynch et al., to obtain the time slot and carrier allocation method as specified in the claim.

Regarding **claim 17**, and **as applied to claim 16 above**, Yongue et al., as modified by Gitlin et al. and Lynch et al., teach the time slot and carrier allocation method, further comprising transmitting the single data stream using the common set of carriers during the designated time slots ("The Tx configuration unit 52 receives information about the channel over which data is to be transmitted from the MAC interface 74 and uses this information to select an appropriate channel map from the channel maps memory 78. The selected channel map specifies a transmission mode, as well as a modulation type … and set of carriers to be used for the data transmission, …", Column 5, Lines 1-7).

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application Publication # 2004/0184427 A1)** and further in view of **Parizhsky et al. (US Patent # 7,212,564 B2)**.

Regarding **claim 21**, and **as applied to claim 16 above**, Parizhsky et al., as modified by Gitlin et al. and Lynch et al., teach an electronic storage medium (read as memory (Fig. 3 @ 201) includes "an allocation routine 204, communications routines 212, transmission data 207 and customer/mobile station data 208.", Column 5 Lines 11-13) storing instructions which, when executed on a programmed processor (read as processor (Fig.2 @ 214) controls the operation "... of one or more routines stored in memory 201.", Column 5 Lines 10-11), carry out a time slot and carrier allocation method.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application Publication # 2004/0184427 A1)** and further in view of **Wang et al. (US Patent # 7,212,564 B2)**.

Regarding **claim 7**, and **as applied to claim 16 above**, Wang et al., as modified by Gitlin et al. and Lynch et al., teach the time slot and carrier allocation method further comprising transmitting a control stream of data (read as a default channel which has been initially set-up to where a communication device can transmit data over the network) to the first and second receivers using the common carrier ("Even though different devices may be assigned to different channels in the multichannel BAN, they still maintain their default channel each time they access the network.", (Column 2 Lines 54-57)).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application**

Publication # 2004/0184427 A1) and further in view of **Sun et al. (US Patent # 6,396,822 B1)**.

Regarding **claim 9**, and **as applied to claim 16 above**, Sun et al., as modified by Gitlin et al. and Lynch et al. time slot and carrier allocation method, teach wherein the single stream of data comprises audio/video data ("The signals typically convey various types of information such as audio, video, and data to and from transceiving devices such as cellular base stations, cellular subscriber units, and personal computers." Column 1, Lines 23-26).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application Publication # 2004/0184427 A1)** and further in view of **Rakib et al. (US Patent # 6,356,555 B1)**.

Regarding **claim 13**, and **as applied to claim 16 above**, Rakib et al., as modified by Gitlin et al. and Lynch et al. time slot and carrier allocation method, teach wherein the communication system comprises an Orthogonal Frequency Division Multiplexed TDMA communication system (Column 8 Lines 4-8 and Column 13 Lines 57-60).

Allowable Subject Matter

3. **Claim 32** is allowed.

Consider **claim 32**, the best prior art found during the examination of the present, **Gitlin et al. (US Patent # 6,064,662)** in view of **Lynch et al. (US Patent Application Publication # 2004/0184427 A1)**, fails to teach "*...and wherein the tone map*

designates that the first and second receivers receive the single data stream using merged time slots, and wherein the single stream of data comprises audio/video data; *wherein a number of unused carriers allocated to the control stream of data is less than a specified maximum, and wherein the specified maximum comprises approximately 10% of available carriers, …*"

Claims 33-34 are also allowed by virtue of their dependency on **claim 32**.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

4. Applicant's arguments filed on January 4, 2008 have been fully considered but they are not persuasive. The Applicant argues, see Page 6 Section entitled "Regarding all Prior Art Rejections" second paragraph Lines 2-3 states "*fails to disclose the threshold number comprises approximately 50% of available carriers".*, filed on January 4, 2008, with respect to claim 16. The examiner respectfully disagrees since Gitlin et al. teaches that by using "… their respective transmitters … various of the users 46, 48, 50 can modulate their signals into one or more of the available frequency bands 42 on a time slot-by-slot 44 basis in order to effect optimum scheduling of the users within the medium 40 to efficiently make use of the available time-frequency medium 40." Column 4, Lines 43-49). Using the tone map (Fig.5 @ 40) from Gitlin et al. we can deduct that every carrier (a total of 8) can be shared by the users. For example, if one of the

carriers is currently being used there are seven available carriers which can be used by the users, therefore the threshold number for available carriers is 7/8 which is greater than 50 % of the available carriers. Furthermore, Gitlin et al. teach a central control (Fig.5 @ 100) maintains "... or otherwise keep a lookup table containing the status of the availability of space within the medium 40 ..." (Column 4, Lines 43-49). Therefore, the central control (Fig.5 @ 100) is capable of allocating "... particular time-frequency slices 52 to a given user so as to anticipate "future" requests which will be made by users 46, 48, 50 so as to best optimize full use of the overall medium 40" (Column 5, Lines 1-4).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed to**:

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Any inquiry concerning this communication or early communications from the Examiner should be directed to Salvador E. Rivas whose telephone number is (571) 270-1784. The examiner can normally be reached on Monday-Friday from 7:30AM to 5:00PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Huy D. Vu can be reached on (571) 272- 3155. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Salvador E. Rivas
S.E.R./ser

April 10, 2008

/Huy D. Vu/

Supervisory Patent Examiner, Art Unit 2616